

# Technical Specifications

MGE™ Galaxy™ 3500

10–30 kVA 208/220 V





# Table of Contents

<b>Technical Data</b>	1
<b>Model List</b>	1
UPS for up to 2 Battery Modules	1
UPS for up to 4 Battery Modules	1
<b>Input Power Factor</b>	1
<b>Efficiency</b>	2
Efficiency Curves	2
<b>Derating due to Load Power Factor</b>	3
<b>Batteries</b>	4
Efficiency DC to AC	4
Battery Run-Times - APC Battery Solution	4
Battery Run-Times - Non-Modular Batteries	9
Battery Discharge Current	10
End of Discharge Voltage	11
Battery Gassing Rates	12
Electrolyte Values for SYBTU1–PLP	13
Battery Material Safety Data Sheet	14
<b>Communication and Management</b>	14
Network Management Card	14
Input and Output Contacts	14
<b>EPO in Single Systems</b>	16
<b>EPO in Parallel Systems</b>	17
<b>Compliance</b>	17
<b>Facility Planning</b>	18
<b>AC Input Specifications</b>	18
<b>AC Bypass Input Specifications</b>	18
<b>AC Output Specifications</b>	19
<b>Battery Specifications</b>	19
<b>Recommended Cable Sizes</b>	20
Connection Terminals	20
Torque Specifications	20
<b>Fuses and Breakers</b>	21
Single Utility/Mains System	21
Dual Utility/Mains System	21
Parallel System	22

Fuse and Breaker Sizes in Single Systems .....	22
Fuse and Breaker Sizes in Parallel Systems .....	22
Minimum Breaker Settings .....	23
<b>Physical .....</b>	<b>24</b>
Weights and Dimensions .....	24
Shipping Weights and Dimensions .....	25
Clearance .....	26
<b>Environmental .....</b>	<b>26</b>
Heat Dissipation .....	27
<b>Default Settings .....</b>	<b>27</b>
<b>Drawings .....</b>	<b>28</b>
Typical System Arrangements .....	29
Single System 10-30 kVA 208 V .....	30
Single System 10-30 kVA 480 V .....	31
<b>Options .....</b>	<b>32</b>
<b>Hardware Options .....</b>	<b>32</b>
Maintenance Bypass Cabinets .....	32
MGE Galaxy 3500 Battery Enclosures .....	32
Input Transformers .....	32
Battery Modules .....	32
Baying Kits .....	32
Management Cards .....	32
Filters .....	33
Additional Options Compatible with MGE Galaxy 3500 .....	33
<b>Configuration Options .....</b>	<b>33</b>
<b>Parallel Capabilities .....</b>	<b>34</b>
Paralleling Capabilities .....	34
<b>APC by Schneider Electric Limited Factory Warranty .....</b>	<b>35</b>
<b>Three Phase Power Products or Cooling Solutions One-Year Factory     Warranty .....</b>	<b>35</b>
<b>Terms of Warranty .....</b>	<b>35</b>
<b>Non-transferable Warranty .....</b>	<b>35</b>
<b>Assignment of Warranties .....</b>	<b>35</b>
<b>Drawings, Descriptions .....</b>	<b>35</b>
<b>Exclusions .....</b>	<b>35</b>
<b>Warranty Claims .....</b>	<b>36</b>

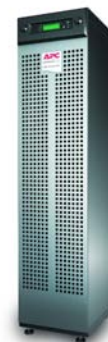
# Technical Data

---

## Model List

### UPS for up to 2 Battery Modules

- MGE Galaxy 3500 10 kVA 208 V
- MGE Galaxy 3500 15 kVA 208 V

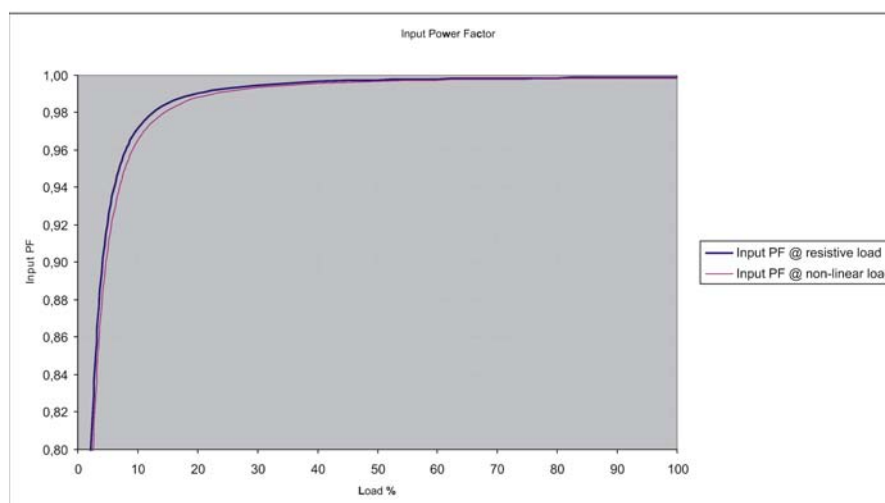


### UPS for up to 4 Battery Modules

- MGE Galaxy 3500 10 kVA 208 V
- MGE Galaxy 3500 15 kVA 208 V
- MGE Galaxy 3500 20 kVA 208 V
- MGE Galaxy 3500 30 kVA 208 V



## Input Power Factor

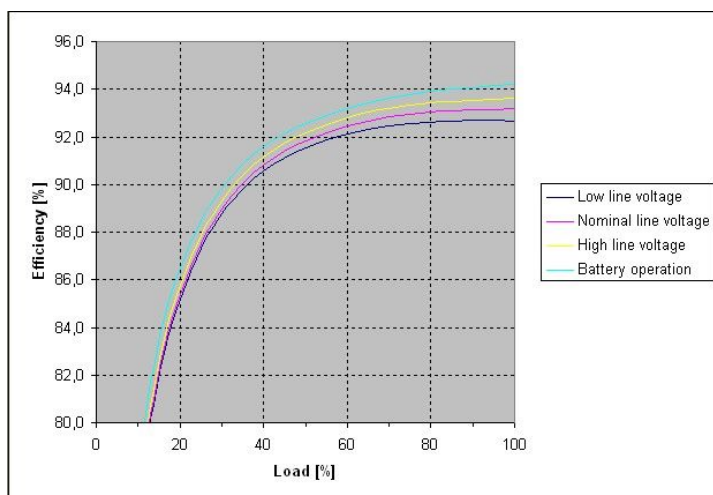


# Efficiency

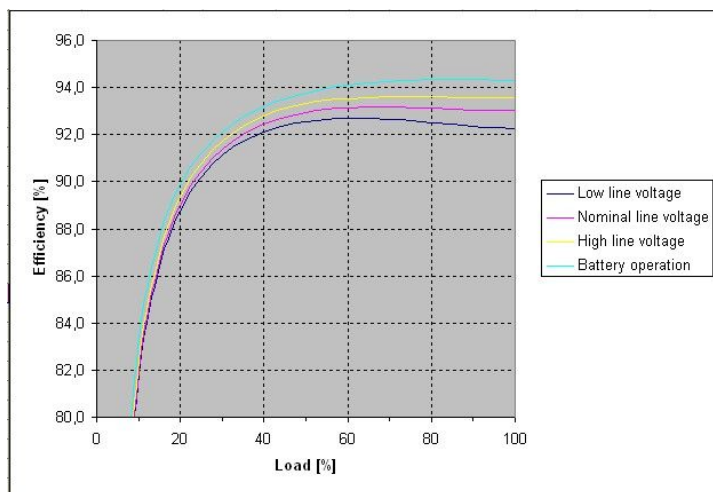
System	25% load	50% load	75% load	100% load
10 kVA 208 V	87.5	91.8	92.9	93.2
15 kVA 208 V	90.4	92.9	93.1	93
20 kVA 208 V	88.6	92.4	93.3	93.4
30 kVA 208 V	91.2	93.3	93.3	93.1

## Efficiency Curves

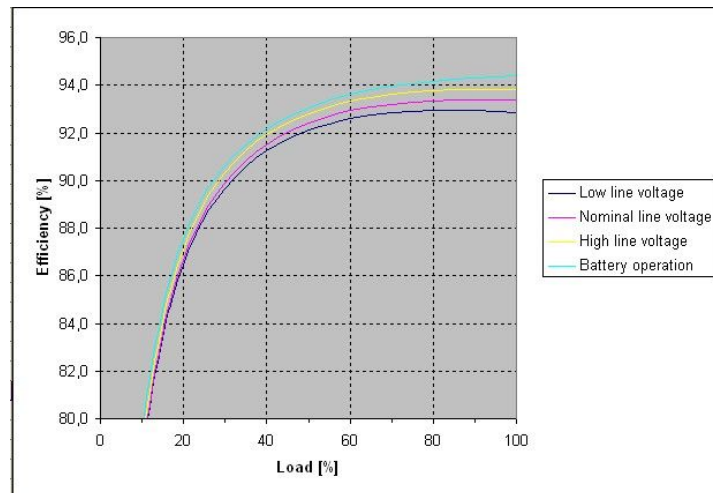
### 10 kVA 208 V



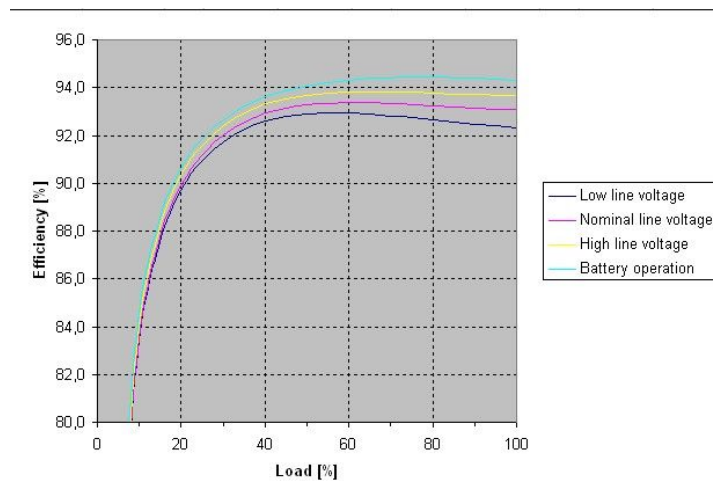
### 15 kVA 208 V



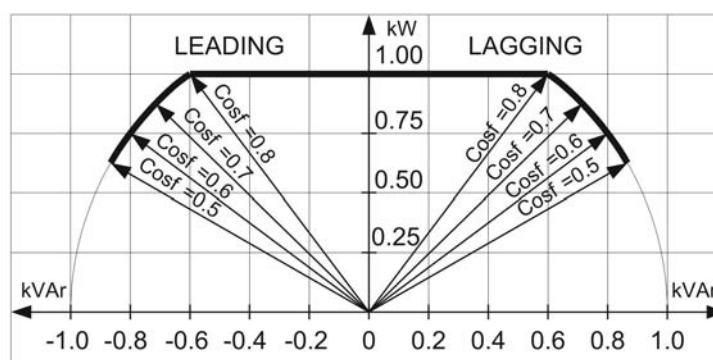
## 20 kVA 208 V



## 30 kVA 208 V



## Derating due to Load Power Factor



# Batteries

## Efficiency DC to AC

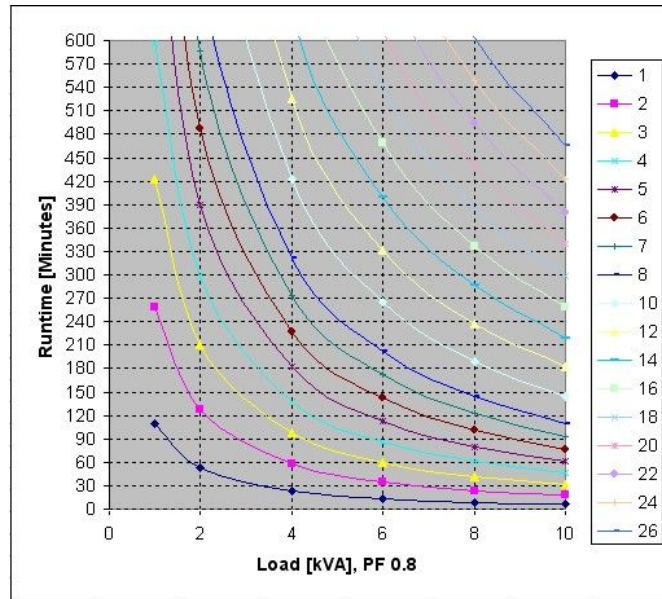
	10 kVA		15 kVA		20 kVA		30 kVA	
	208 V	220V	208 V	220V	208 V	220V	208 V	220V
Efficiency at nominal batt. voltage (%)	94.3	94.4	94.3	94.4	94.3	94.4	94.3	94.4

## Battery Run-Times - APC Battery Solution

“Bat. shelves” indicates the total number of populated battery shelves in the UPS and Battery Enclosure.

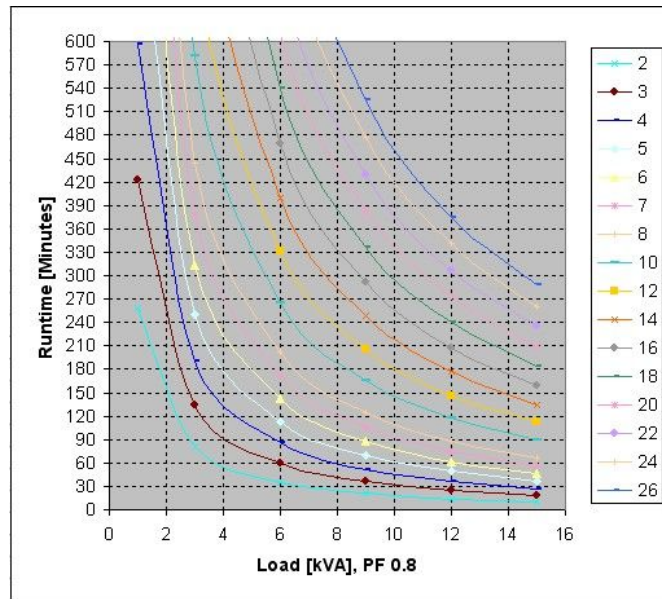


## 10 kVA 208 V Typical Performances



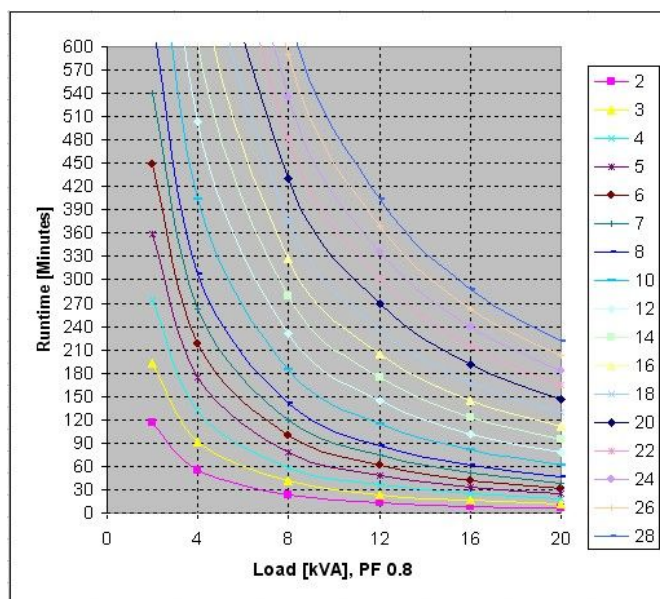
	Load kVA					
# of battery shelves	1	2	4	6	8	10
1	110	53	23	13	9	6
2	258	128	58	35	24	18
3	422	210	97	60	42	31
4	597	298	138	86	61	46
5	781	390	182	113	80	61
6	973	487	227	142	101	77
7	1172	586	274	172	122	93
8	1376	689	322	202	144	110
9	1586	794	372	233	167	128
10	1800	901	422	265	189	145
11	2019	1011	474	298	213	163
12	2241	1123	526	331	237	182
13	2468	1236	580	365	261	200
14	2697	1352	634	399	286	219
15	2931	1468	689	434	310	239
16	3167	1587	745	469	336	258
17	3406	1707	801	505	361	278
18	3648	1829	858	541	387	298
19	3893	1951	916	577	413	318
20	4140	2075	975	614	440	339
21	4390	2201	1034	652	467	359
22	4642	2327	1093	689	494	380
23	4897	2455	1153	727	521	401
24	5154	2584	1214	765	548	422
25	5413	2714	1275	804	576	444
26	5674	2845	1337	843	604	465

## 15 kVA 208 V Typical Performances



	Load kVA					
# of battery shelves	1	3	6	9	12	15
1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	258	81	35	21	14	10
3	422	134	60	36	25	18
4	597	191	86	52	36	27
5	781	251	113	70	49	37
6	973	314	142	88	62	47
7	1172	378	172	106	75	57
8	1376	444	202	125	88	67
9	1586	512	233	145	102	78
10	1800	582	265	165	117	89
11	2019	653	298	185	131	100
12	2241	725	331	206	146	112
13	2468	799	365	227	161	123
14	2697	873	399	249	177	135
15	2931	949	434	270	192	147
16	3167	1026	469	292	208	159
17	3406	1103	505	315	224	171
18	3648	1182	541	337	240	184
19	3893	1261	577	360	256	196
20	4140	1342	614	383	273	209
21	4390	1423	652	407	290	222
22	4642	1505	689	430	306	235
23	4897	1587	727	454	323	248
24	5154	1671	765	478	341	261
25	5413	1755	804	502	358	274
26	5674	1840	843	526	375	288

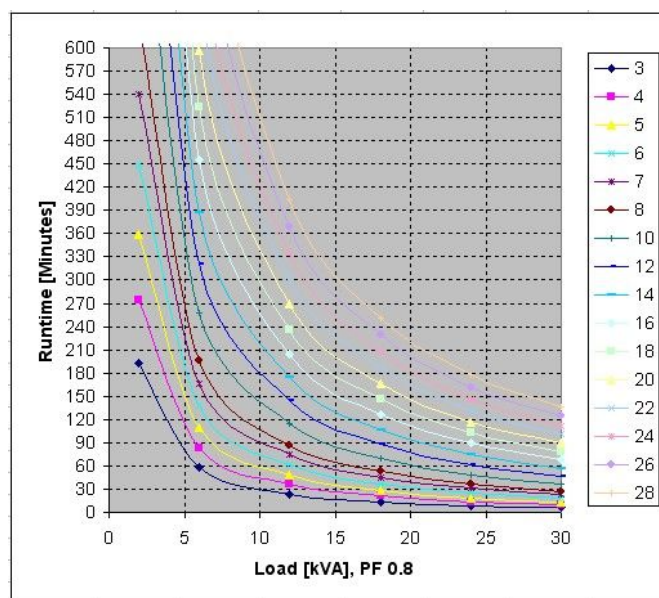
## 20 kVA 208 V Typical Performances



	Load kVA					
# of battery shelves	2	4	8	12	16	20
1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	117	55	24	14	9	6
3	193	92	41	24	16	12
4	274	132	59	36	25	18
5	359	174	78	48	33	25
6	448	217	99	61	42	32
7	540	262	119	74	52	39
8	634	308	141	87	61	46
9	731	355	163	101	71	54
10	830	404	185	115	81	62
11	931	453	208	129	91	70
12	1034	503	231	144	102	78
13	1138	554	255	159	113	86
14	1244	606	279	174	123	94
15	1352	659	303	189	134	103
16	1461	712	328	205	145	111
17	1572	766	353	220	157	120
18	1684	821	378	236	168	129
19	1797	876	404	252	180	137
20	1911	932	430	269	191	146
21	2027	988	456	285	203	155
22	2143	1045	482	302	215	165
23	2261	1103	509	318	227	174
24	2379	1161	536	335	239	183
25	2499	1219	563	352	251	193
26	2620	1278	590	369	263	202

	Load kVA					
# of battery shelves	2	4	8	12	16	20
27	2741	1338	618	387	276	211
28	2864	1397	645	404	288	221

### 30 kVA 208 V Typical Performances



	Load kVA					
# of battery shelves	2	6	12	18	24	30
1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	193	58	24	14	9	6
4	274	83	36	21	14	10
5	359	110	48	29	19	14
6	448	138	61	36	25	18
7	540	166	74	45	31	23
8	634	196	87	53	37	27
9	731	226	101	61	43	32
10	830	257	115	70	49	37
11	931	289	129	79	55	42
12	1034	321	144	88	62	47
13	1138	354	159	98	69	52
14	1244	387	174	107	75	57
15	1352	421	189	117	82	62
16	1461	455	205	126	89	68
17	1572	489	220	136	96	73
18	1684	524	236	146	103	78
19	1797	560	252	156	110	84
20	1911	596	269	166	117	89

	Load kVA					
# of battery shelves	2	6	12	18	24	30
21	2027	632	285	176	125	95
22	2143	668	302	187	132	101
23	2261	705	318	197	140	106
24	2379	742	335	208	147	112
25	2499	780	352	218	155	118
26	2620	817	369	229	162	124
27	2741	855	387	240	170	130
28	2864	894	404	251	178	136

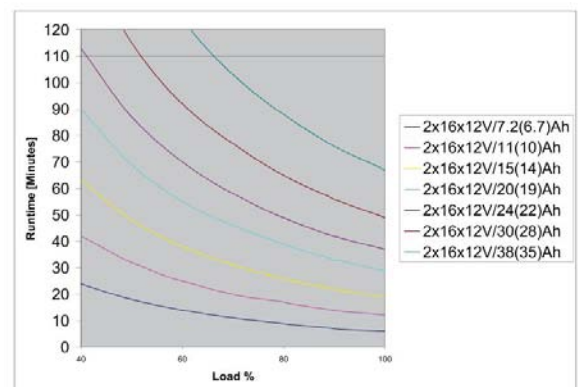
## Battery Run-Times - Non-Modular Batteries

- The below battery run-times are based on high quality batteries from approved manufacturers
- The run-times are based on high rate batteries designed for UPS systems
- The run-times are intended as a guide only, and APC disclaim the responsibility for these runtimes

### 10 kVA

\* Approximately equivalent 10 hr rate ah

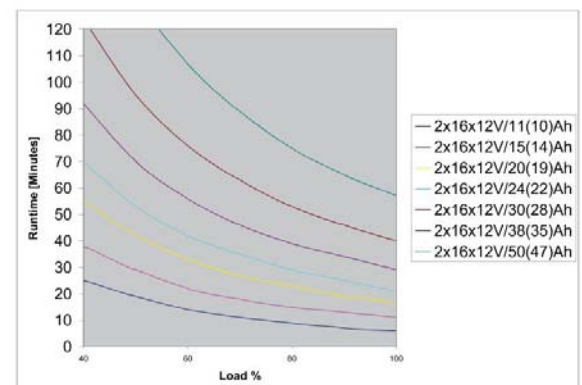
Battery Ah		Load %						
20 hr rate	*10 hr rate	40	50	60	70	80	90	100
7.2	6.7	24	18	14	11	9	7	6
11	10	42	32	25	20	17	14	12
15	14	63	48	38	31	26	22	19
20	19	90	69	55	46	39	33	29
24	22	113	87	70	58	49	42	37
30	28	149	115	92	77	65	56	49
38	35	199	154	124	103	88	76	67



### 15 kVA

\* Approximately equivalent 10 hr rate ah

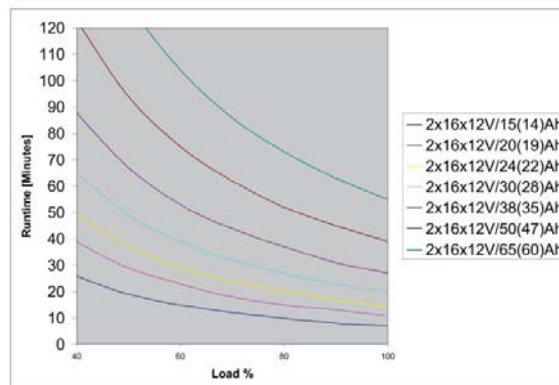
Battery Ah		Load %						
20 hr rate	*10 hr rate	40	50	60	70	80	90	100
11	10	25	19	14	11	9	7	6
15	14	38	29	22	18	15	13	11
20	19	55	42	33	27	23	19	17
24	22	70	53	42	35	29	25	21
30	28	92	70	56	46	39	34	29
38	35	124	95	76	63	53	46	40
50	47	174	133	107	89	75	65	57



## 20 kVA

\* Approximately equivalent 10 hr rate ah

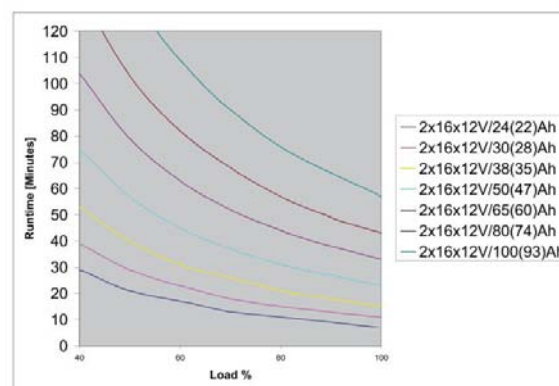
Battery Ah		Load %						
20 hr rate	*10 hr rate	40	50	60	70	80	90	100
15	14	26	19	15	12	10	8	7
20	19	39	29	23	18	15	13	11
24	22	49	37	29	24	20	17	14
30	28	65	49	39	32	27	23	20
38	35	88	67	53	44	37	31	27
50	47	123	94	75	62	52	45	39
65	60	170	130	104	86	73	63	55



## 30 kVA

\* Approximately equivalent 10 hr rate ah

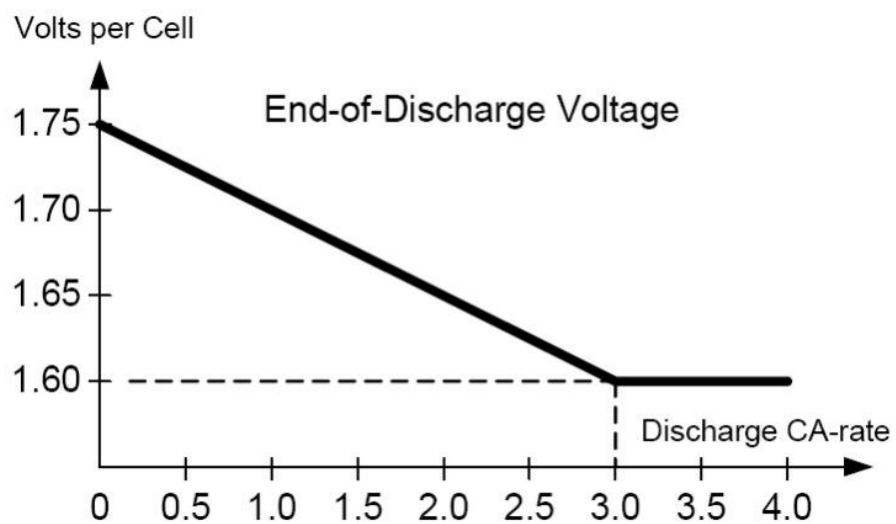
Battery Ah		Load %						
20 hr rate	*10 hr rate	40	50	60	70	80	90	100
24	22	29	21	17	13	11	9	7
30	28	39	29	23	18	15	13	11
38	35	53	40	31	26	21	18	15
50	47	75	57	45	37	31	27	23
65	60	104	79	63	52	44	38	33
80	74	135	103	82	68	57	49	43
100	93	178	136	109	90	76	66	57



## Battery Discharge Current

	10 kVA	15 kVA	20 kVA	30 kVA
I bat @ Vbat nominal, 100% load	22	33	44	66
I bat @ Vbat min, 100% load	28	41	55	83
I bat @ Vbat min, 150% load	40	62	83	125

## End of Discharge Voltage



## Battery Gassing Rates

### 10–15 kVA



**Note:** We recommend that room ventilation is based on maximum values.

Battery position	# of bat shelves	Gassing rate cc/hr (ml/hr)	
		Typical	Max
UPS	1	24	48
UPS	2	48	96
XR1	3	72	144
XR1	4	96	192
XR1	5	120	240
XR1	6	144	288
XR1	7	168	336
XR1	8	192	384
XR2	9	216	432
XR2	10	240	480
XR2	11	264	528
XR2	12	288	576
XR2	13	312	624
XR2	14	336	672
XR3	15	360	720
XR3	16	384	768
XR3	17	408	816
XR3	18	432	864
XR3	19	456	912
XR3	20	480	960
XR4	21	504	1008
XR4	22	528	1056
XR4	23	552	1104
XR4	24	576	1152
XR4	25	600	1200
XR4	26	624	1248



## 20–30 kVA



**Note:** We recommend that room ventilation is based on maximum values.

Battery position	# of bat shelves	Gassing rate cc/hr (ml/hr)	
		Typical	Max
UPS	1	24	48
UPS	2	48	96
UPS	3	72	144
UPS	4	96	192
XR1	5	120	240
XR1	6	144	288
XR1	7	168	336
XR1	8	192	384
XR1	9	216	432
XR1	10	240	480
XR2	11	264	528
XR2	12	288	576
XR2	13	312	624
XR2	14	336	672
XR2	15	360	720
XR2	16	384	768
XR3	17	408	816
XR3	18	432	864
XR3	19	456	912
XR3	20	480	960
XR3	21	504	1008
XR3	22	528	1056
XR4	23	552	1104
XR4	24	576	1152
XR4	25	600	1200
XR4	26	624	1248
XR4	27	648	1296
XR4	28	672	1344
XR4	28	672	1344

## Electrolyte Values for SYBTU1–PLP

	Battery module	String of batteries (Four battery modules)
Electrolyte volume L (gal)	2.78 (0.72)	11.14 (2.87)
Electrolyte weight kg (lbs)	3.72 (8.18)	14.86 (32.73)
Sulfuric acid volume L (gal)	0.89 (0.23)	3.54 (0.91)
Sulfuric acid weight kg (lbs)	1.62 (3.57)	6.48 (14.27)

## Battery Material Safety Data Sheet



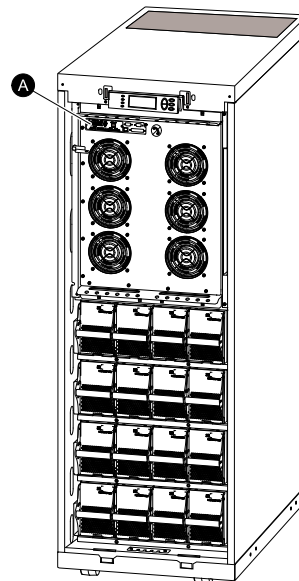
**Note:** For Material Safety Data Sheet (MSDS), go to [“http://nam-en.apc.com/app/answers/detail/a\\_id/564/kw/msds”](http://nam-en.apc.com/app/answers/detail/a_id/564/kw/msds).

## Communication and Management

### Network Management Card

The system is equipped with one network management card for remote monitoring and control of an individual UPS by connecting it directly to the network.

A. Network Management Card



### Input and Output Contacts

Pins 7 and 8 are for external charge control. When 7 and 8 are closed, the UPS charges batteries with a pre-defined percentage (0-25-50-75-100%) of the maximum charging power. To be used in generator applications, or if special codes require control of charging.

Pins 5 and 6 are for external maintenance bypass Q3 (auxiliary switch N/C type). When Q3 is closed, signals are fed back to the UPS controller.

Pins 1 to 4 are for battery measurement (only applicable to APC XR Battery Enclosures).

Pin	Description
8	External charging control return
7	External control of charging
6	Q3 active return
5	Q3 active
4	Battery measurement supply <sup>1</sup>
3	Battery unit quantity <sup>1</sup>
2	Maximum battery temperature <sup>1</sup>
1	Battery measurement return <sup>1</sup>
<sup>1</sup> To be used with APC XR Battery Enclosure.	

The diagram illustrates the internal wiring of the APC XR Battery Enclosure. It shows a main terminal block with pins 1 through 8. A circular inset provides a magnified view of the internal components, including the J106 connector and the 8011 component. To the right of the main terminal block, there is a detailed wiring diagram showing the connections for pins 1 through 8. Pins 1, 2, 3, and 4 are connected to a common ground. Pins 5 and 6 are connected to a common ground. Pins 7 and 8 are connected to a common ground. The diagram also shows the connection of the battery measurement supply (pin 4) and the battery measurement return (pin 1) to the battery unit.

# EPO in Single Systems

Connect the EPO cable using one of the following four wiring configurations.



**Note:** Use only 1-1½ mm² copper wire for the connection of the Emergency Power Off (EPO) and other optional equipment.

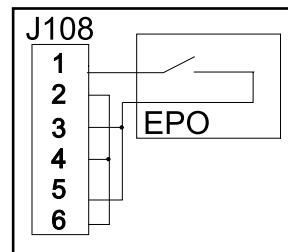


**Note:** The UPS must be connected to either a dry contact or a 24 VDC EPO (Emergency Power Off) switch.

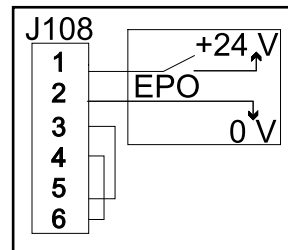


**Note:** The external EPO +24 VDC, 1500 mA circuit can be supplied through other vendors.

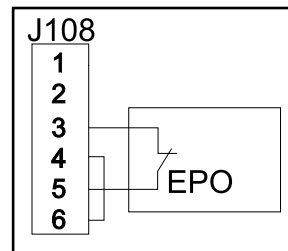
1. **Dry Contacts Normally Open:** EPO is activated when pin 1 is connected to pins 3 and 5. Connections: 2-4-6, 3-5, and 1 (Normally Open).



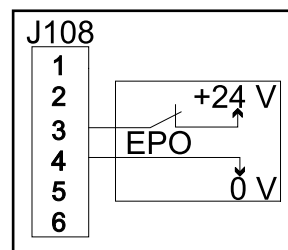
2. **+24 V Normally Open:** EPO is activated when an isolated SELV 24 VDC voltage is supplied on pin 1 with reference to pin 2. Connections: 3-5 and 4-6.



3. **Dry Contacts Normally Closed:** EPO is activated when a connection from pin 3 to 5 is opened. Connections: 4-6.



4. **+24 V Normally Closed:** EPO is activated when a SELV 24 VDC voltage is removed from pin 3 with reference to pin 4.



# EPO in Parallel Systems

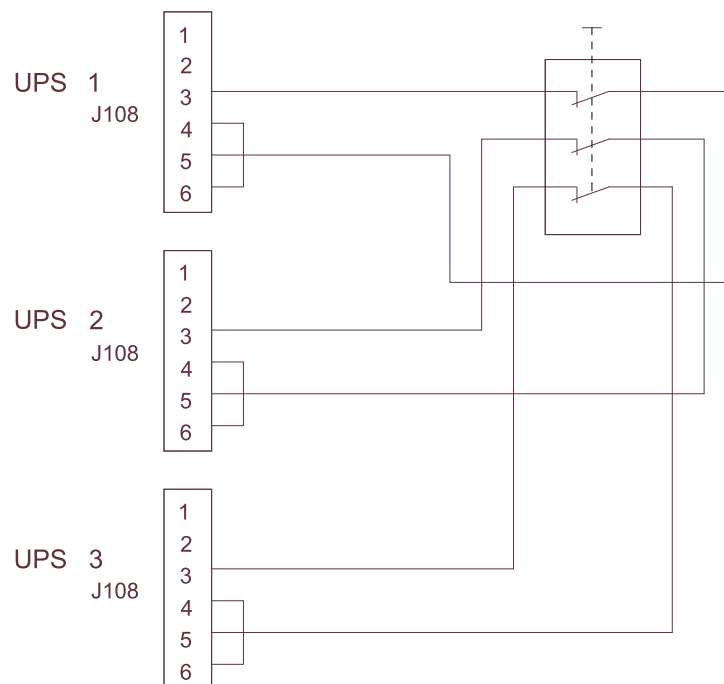
In parallel systems each UPS unit must have its own dry contact (voltage free) connected to J108. The drawing below shows a “Normally Closed” installation of three UPS units in parallel.



**WARNING: For parallel and separate systems with common EPO, each UPS unit must be connected to a separate dry contact.**



**WARNING: Parallel EPO wiring between more UPS units can result in critical UPS malfunctioning.**



## Compliance

Directives for CE marking	89/336/EDC73/237/EEC
Safety	EN/IEC62040-1-1UL1778
EMC	EN50091-2/IEC62040-2FCC15A
Performance	EN/IEC62040-3
Electromagnetic compatibility (EMC)	EN/IEC 61000-4-2 level 3, performance criteria AEN/IEC 61000-4-3 level 2, performance criteria AEN/IEC 61000-4-4 level 2, performance criteria AEN/IEC 61000-4-5 level 3, performance criteria A

# Facility Planning

---

## AC Input Specifications

	10 kVA		15 kVA		20 kVA		30 kVA	
	208 V	220 V	208 V	220 V	208 V	220 V	208 V	220 V
Connection type	4-wire (3PH + N + G)							
Input frequency (Hz)	40-70							
I thd	< 5% at full load							
Nom input current (A)	24.3	23.0	36.6	34.6	48.6	45.8	73.2	69.0
Max input current (A)	26.7	25.2	40.2	38.0	53.0	50.1	80.1	75.8
Input current limitation (A)	32.8	32.8	49.5	49.5	65.2	65.2	98.8	98.8
Input power factor correction	> 0.98 at load > 50%							
Maximum Short Circuit Withstand (kA)	30							

## AC Bypass Input Specifications

	10 kVA		15 kVA		20 kVA		30 kVA	
	208 V	220 V	208 V	220 V	208 V	220 V	208 V	220 V
Connection type	4-wire (3PH + N + G)							
Input frequency (Hz)	50 +/- 10 or 60 +/- 10							
Nom input current (A)	27.8	26.2	41.6	39.4	55.5	52.5	83.3	78.7

## AC Output Specifications

	10 kVA		15 kVA		20 kVA		30 kVA	
	208 V	220 V	208 V	220 V	208 V	220 V	208 V	220 V
Connection type	4-wire (3PH + N + G)							
Overload capacity	150% for 1 minute (normal operation) 125% for 10 minutes (normal operation) 150% for 1 minute (battery operation) 125% for 10 minutes (battery operation) 110% continuous (bypass operation) 800% for 500 ms (bypass operation)							
Voltage tolerance	160-240 V for 208 V systems 160-253 V for 220 V systems							
Nom output current (A)	27.8	26.2	41.6	39.4	55.5	52.5	83.3	78.7
Output frequency (sync to mains)	50 Hz $\pm 0.1$ Hz, $\pm 3$ Hz, $\pm 10$ Hz 60 Hz $\pm 0.1$ Hz, $\pm 3$ Hz, $\pm 10$ Hz							
Slew rate (Hz/Sec)	0.25-1							
Total Harmonic Distortion (THD)	< 1.5% linear < 3.5% non-linear							
Load power factor	0.5 leading to 0.5 lagging							
Dynamic load response	$\pm 5\%$							
Output voltage regulation	$\pm 1\%$							

## Battery Specifications

Type	VRLA
Nominal voltage (VDC)	+/- 192
Float voltage (VDC)	+/- 219
End of discharge voltage (VDC)	+/- 154
Battery current (at full load)	66.5 A at +/-192 V
Max. current (at end of discharge)	83.2 A at + 154 V
Max. charging power	10 kVA: 1600 W 15 kVA: 2400 W 20 kVA: 3200 W 30 kVA: 3200 W
Typical re-charge time	5 hours
End voltage	1.6-1.75 V/cell (automatic, depending on load)

# Recommended Cable Sizes



**WARNING:** At 100% switch mode load, the neutral must be rated for 200% phase current.



**Caution:** All wiring must comply with all applicable national and/or electrical code.



**Note:** The recommended cable sizes are based on an environment with an ambient temperature of 30° C (86° F).

	10 kVA	15 kVA	20 kVA	30 kVA
Utility/mains input	8 AWG	6 AWG	4 AWG	1 AWG
Static bypass input	8 AWG	6 AWG	4 AWG	1 AWG
DC input	1 AWG	1 AWG	1 AWG	1 AWG
Output	8 AWG	6 AWG	4 AWG	1 AWG

## Connection Terminals

Cable size (AWG)	Cable lug type	Crimping tool	Die	Terminal bolt diameter
12	YA12CL2TC38	MD7-34R	W12CVT	6 mm (0.2 in)
8	YA8CL2TC38	MD7-34R	W8CVT	6 mm (0.2 in)
6	YA6CL2TC38	MD7-34R	W6CVT	6 mm (0.2 in)
4	YA4CL2TC38	MD7-34R	W4CVT	6 mm (0.2 in)
1	YA1CL2TC38	MD7-34R	W1CVT	6 mm (0.2 in)

## Torque Specifications

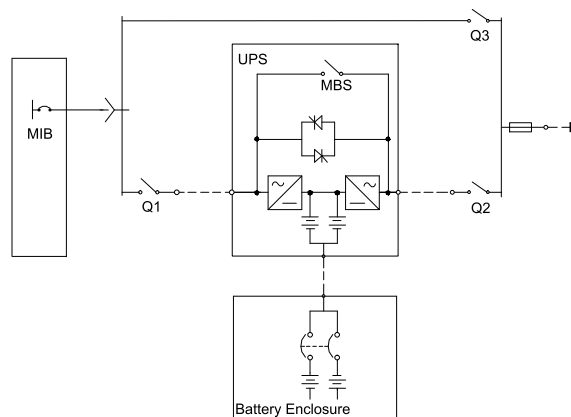
The power wiring should be torqued to 7 Nm (45 lbf-in).



# Fuses and Breakers

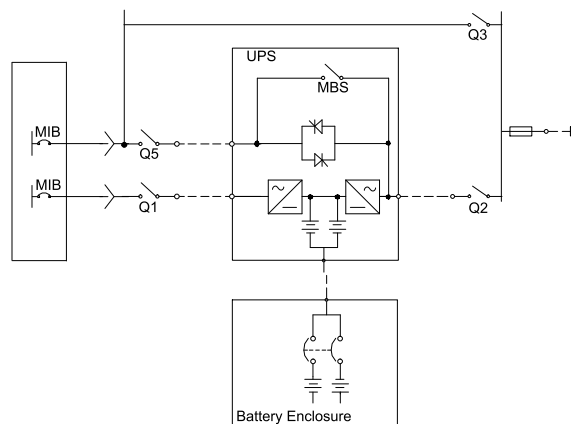
## Single Utility/Mains System

- Q1: Utility/mains input
- Q2: UPS output
- Q3: Manual bypass
- MBS: Mechanical bypass switch



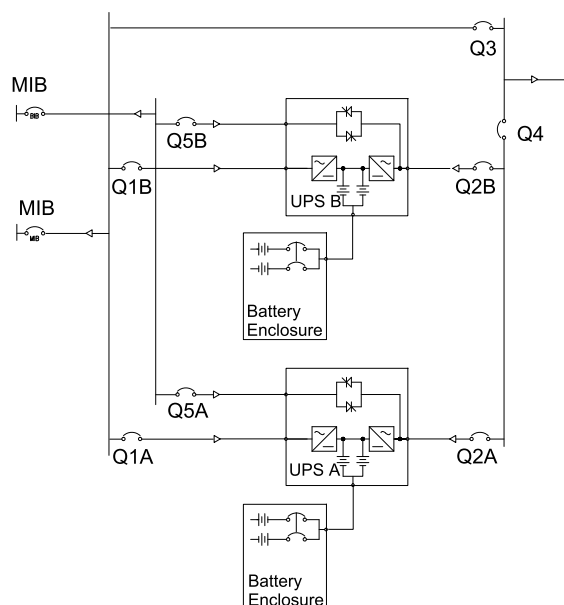
## Dual Utility/Mains System

- Q1: Utility/mains input
- Q2: UPS output
- Q3: Manual bypass
- Q5: Static bypass input
- MBS: Mechanical bypass switch



## Parallel System

- Q1: Utility/mains input
- Q2: UPS output
- Q3: Manual bypass
- Q4: System output
- Q5: Static bypass input



## Fuse and Breaker Sizes in Single Systems

	10 kVA	15 kVA	20 kVA	30 kVA
Utility input Q1	35 A	60 A	80 A	110 A
Static bypass input Q5	35 A	60 A	80 A	110 A
UPS output Q2	35 A	60 A	80 A	110 A
Manual bypass Q3	35 A	60 A	80 A	110 A

## Fuse and Breaker Sizes in Parallel Systems

### Q3 and Q4 in Parallel Capacity Systems

Units in parallel	10 kVA	15 kVA	20 kVA	30 kVA
2	70 A	110 A	150 A	225 A
3	110 A	175 A	225 A	350 A
4	150 A	225 A	300 A	450 A

### Q3 and Q4 in Redundant Parallel Systems (n+1)

Units in parallel	10 kVA	15 kVA	20 kVA	30 kVA
2	35 A	60 A	80 A	110 A
3	70 A	110 A	150 A	225 A
4	110 A	175 A	225 A	350 A

## Minimum Breaker Settings

		800% overload bypass operation	150% overload normal/battery operation	125% overload normal/battery operation	Continuously
	<b>Duration</b>	<b>500 ms</b>	<b>60 s</b>	<b>10 min</b>	
<b>10 kVA</b>	Mains input	- <sup>1</sup>	-	-	34 A
	Static bypass input	223 A	-	-	31 A
	UPS output	223 A	42 A	35 A	31 A
<b>15 kVA</b>	Mains input	- <sup>1</sup>	-	-	51 A
	Static bypass input	333 A	-	-	46 A
	UPS output	333 A	63 A	52 A	46 A
<b>20 kVA</b>	Mains input	- <sup>1</sup>	-	-	68 A
	Static bypass input	444 A	-	-	62 A
	UPS output	444 A	84 A	70 A	62 A
<b>30 kVA</b>	Mains input	- <sup>1</sup>	-	-	99 A
	Static bypass input	667 A	-	-	92 A
	UPS output	667 A	125 A	105 A	92 A
<sup>1</sup> For single mains systems, use the higher value of mains and static bypass					

# Physical

## Weights and Dimensions

UPS Cabinet	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
10kVA 208V with 1 Battery Module Expandable to 2 (G35T10KF1B2S )	305.05 (671.10)	1491 (58.70)	356 (14)	838 (33)
10kVA 208V with 1 Battery Module Expandable to 4 (G35T10KF1B4S )	323.18 (711)		523 (20.60)	
10kVA 208V with 2 Battery Modules (G35T10KF2B2S )	396.82 (873)		356 (14)	
10kVA 208V with 2 Battery Modules Expandable to 4 (G35T10KF2B4S )	415 (913)		523 (20.60)	
10kVA 208V with 3 Battery Modules Expandable to 4 (G35T10KF3B4S )	506.82 (1115)			
10kVA 208V with 4 Battery Modules (G35T10KF4B4S )	600 (1318)			
15kVA 208V with 2 Battery Modules (G35T15KF2B2S )	396.82 (873)		356 (14)	
15kVA 208V with 2 Battery Modules Expandable to 4 (G35T15KF2B4S )	415 (913)		523 (20.60)	
15kVA 208V with 3 Battery Modules Expandable to 4 (G35T15KF3B4S )	506.82 (1115)			
15kVA 208V with 4 Battery Modules (G35T15KF4B4S )	600 (1318)			
20kVA 208V with 2 Battery Modules Expandable to 4 (G35T20KF2B4S )	445 (979)			
20kVA 208V with 3 Battery Modules Expandable to 4 (G35T20KF3B4S )	536.82 (1181)			
20kVA 208V with 4 Battery Modules (G35T20KF4B4S )	629.09 (1384)			
30kVA 208V with 3 Battery Modules Expandable to 4 (G35T30KF3B4S )	536.82 (1181)			
30kVA 208V with 4 Battery Modules (G35T30KF4B4S )	1384			

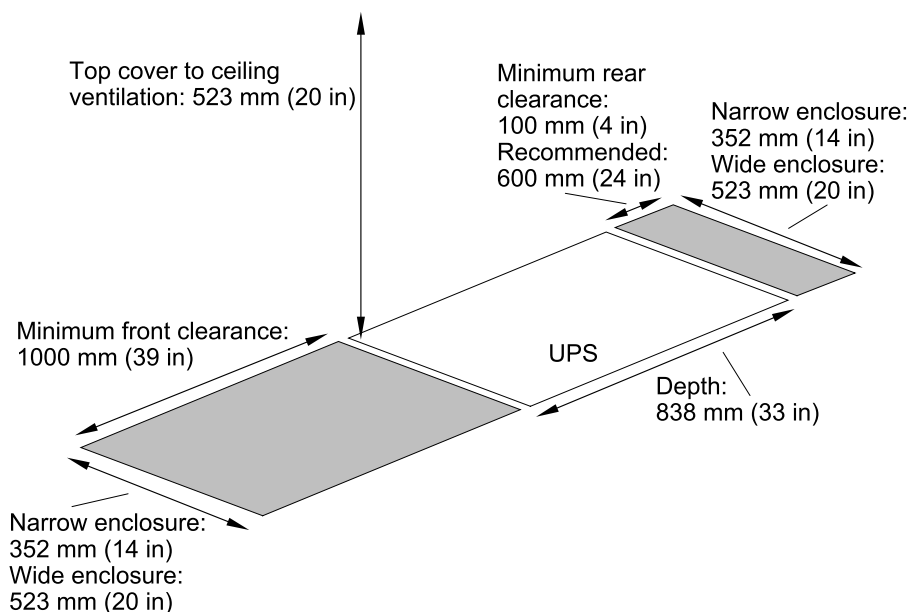
## Shipping Weights and Dimensions

UPS Cabinet	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
10kVA 208V with 1 Battery Module Expandable to 2 (G35T10KF1B2S )	335.92 (739)	1643 (64.7)	650 (25.6)	1062 (41.8)
10kVA 208V with 1 Battery Module Expandable to 4 (G35T10KF1B4S )	354.1 (779)			
10kVA 208V with 2 Battery Modules (G35T10KF2B2S )	427.74 (941)			
10kVA 208V with 2 Battery Modules Expandable to 4 (G35T10KF2B4S )	445.92 (981)			
10kVA 208V with 3 Battery Modules Expandable to 4 (G35T10KF3B4S )	537.73 (1183)			
10kVA 208V with 4 Battery Modules (G35T10KF4B4S )	630 (1386)			
15kVA 208V with 2 Battery Modules (G35T15KF2B2S )	428.18 (942)			
15kVA 208V with 2 Battery Modules Expandable to 4 (G35T15KF2B4S )	445.91 (981)			
15kVA 208V with 3 Battery Modules Expandable to 4 (G35T15KF3B4S )	537.73 (1183)			
15kVA 208V with 4 Battery Modules (G35T15KF4B4S )	1386 (630)			
20kVA 208V with 2 Battery Modules Expandable to 4 (G35T20KF2B4S )	475.91 (1047)			
20kVA 208V with 3 Battery Modules Expandable to 4 (G35T20KF3B4S )	567.73 (1249)			
20kVA 208V with 4 Battery Modules (G35T20KF4B4S )	660 (1452)			
30kVA 208V with 3 Battery Modules Expandable to 4 (G35T30KF3B4S )	568.18 (1250)			
30kVA 208V with 4 Battery Modules (G35T30KF4B4S )	660 (1452)			

## Clearance



**Note:** Clearance dimensions are published for airflow and service access only. Consult with the local safety codes and standards for additional requirements in your local area.



## Environmental

Operating Temperature	0 - 40 °C (32-104 °F)
Storage Temperature with batteries	-15 - 40 °C (-5-113 °F)
Storage Temperature without batteries	-30 - 70 °C (-22-158 °F)
Operating Relative Humidity	0 - 95%, non-condensing
Storage Relative Humidity	0 - 95%, non-condensing
Operating Elevation	0-1000 m: 100% load 1000-1500 m: 95% load 1500-2000 m: 91% load 2000-2500 m: 86% load 2500-3000 m: 82% load
Storage Elevation	0-15000 meters (0-50000 ft )
Audible noise at 70% load – 1 meter from surface of unit 10-20 kVA 208/220 V 30-40 kVA 208/220 V	42.3 dBA 46.2 dBA
Audible noise at 100% load – 1 meter from surface of unit 10-20 kVA 208/220 V 30-40 kVA 208/220 V	51.3 dBA 55.0 dBA
Protection Class	Up to IP51
Colour	Dark grey

## Heat Dissipation

	10 kVA		15 kVA		20 kVA		30 kVA	
	Batteries fully charged	Batteries charging	Batteries fully charged	Batteries charging	Batteries fully charged	Batteries charging	Batteries fully charged	Batteries charging
Heat dissipation kw (BTU/hr)	0.57 (1938)	0.65 (2211)	0.88 (2989)	0.99 (3398)	1.24 (4238)	1.42 (4852)	1.73 (5896)	1.97 (6715)

## Default Settings

System settings (only updated when in load disconnect)	Default setting
Nominal output voltage (ph-ph)	208 V
Frequency	60 Hz
Frequency self-detect mode	Auto
Frequency range	±10 Hz for 208 V
3-wire mode enabled	Off
Frequency slew rate	1 Hz/s
Generator charge percentage	100%
Cyclic charge mode enabled	Off
Auto start	On
Parallel UPS number	1
No. of parallel UPSs	1
MBP present	No
Shutdown mode (can only be set from service port)	Never
<b>Shutdown setting</b>	
Low battery duration	2 minutes
Shutdown delay	20 seconds
Turn on delay	0 seconds
Return of battery capacity	0%
<b>Alarm settings</b>	
Load alarm threshold	System power rating
Runtime alarm threshold	0 (disabled)
Parallel redundancy alarm threshold	n+0 (disabled)
<b>Other settings</b>	
Battery self test	Off
External battery capacity	0 Ah
<b>Display settings</b>	
Display language	English
Display contrast	0
Display beeper state	PwerFail+30
Display beeper volume	Low
Display key click	Off

# Drawings

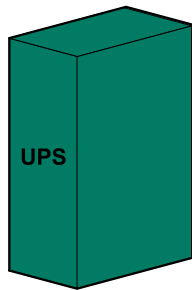
---



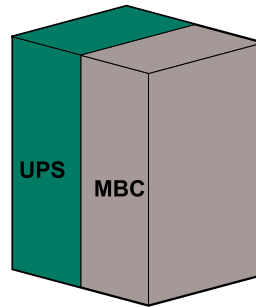
**Note:** A comprehensive set of drawings is available on the engineering website at [www.engineer.apc.com](http://www.engineer.apc.com).



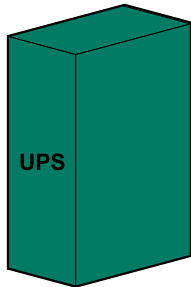
# Typical System Arrangements



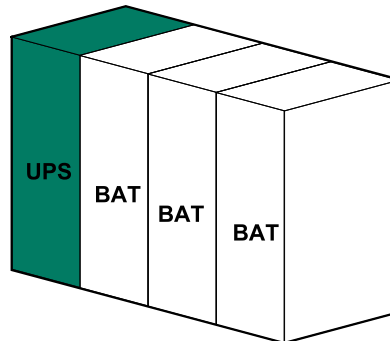
Single System



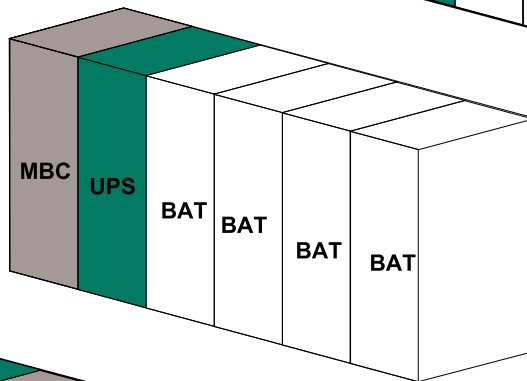
Single System with Maintenance Bypass



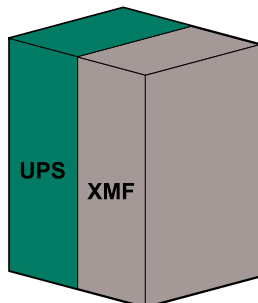
Single System with Wall-Mount Maintenance Bypass



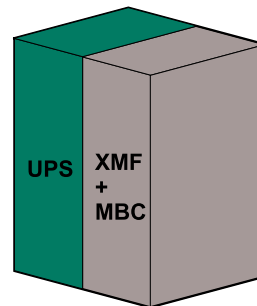
Single System with Modular Batteries



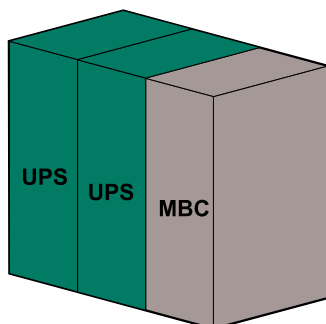
Single System with Maintenance Bypass and Modular Batteries



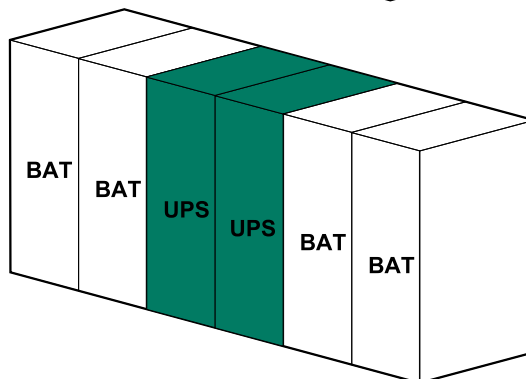
Single System with Transformer



Single System with Transformer + Maintenance Bypass

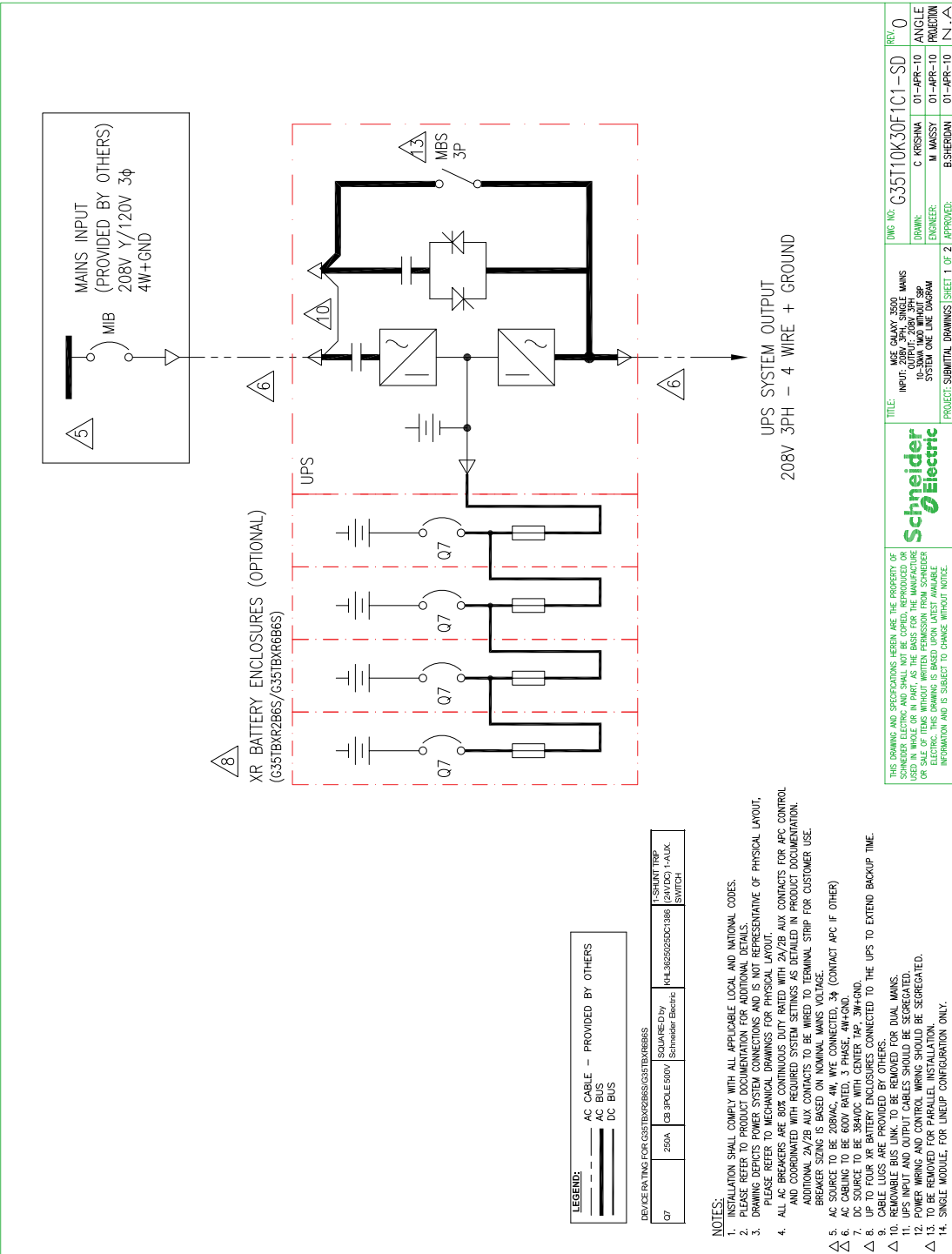


Parallel System with 2 UPS Units and Maintenance Bypass



Parallel System with 2 UPS Units and Modular Batteries

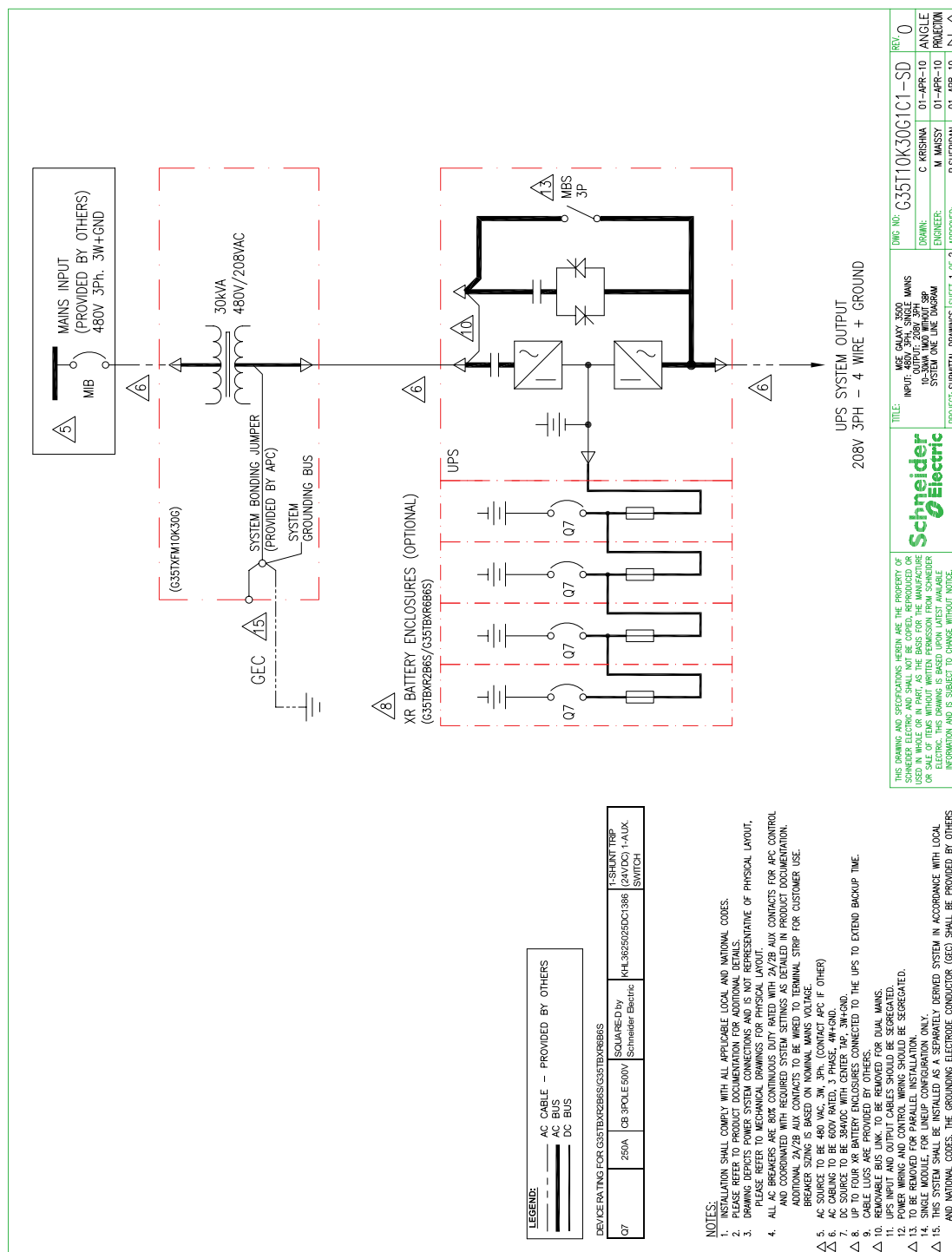
# Single System 10-30 kVA 208 V



TITLE: MGE GALAXY 3500 INPUT, 208V 3PH, SINGLE MAINS 10-30KVA, 208V 3PH, 4W+GND, 3P SYSTEM ONE LINE DIAGRAM		DWG NO: G35T10K30F1C1-SD	REV: 0
DRAWN: C. KRISHNA		01-APR-10	ANGLE
ENGINEER: M. MASSY		01-APR-10	PROJECTION
PROJECT SUBMITAL DRAWINGS SHEET 1 OF 2		01-APR-10	N.A.

THE DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF SCHNEIDER ELECTRIC AND SHALL NOT BE COPIED, REPRODUCED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR REPAIR OF ANY ELECTRICAL EQUIPMENT. SCHNEIDER ELECTRIC ASSUMES NO LIABILITY FOR ANY ERRORS OR OMISSIONS. INFORMATION AND IS SUBJECT TO CHANGE WITHOUT NOTICE.

## Single System 10-30 kVA 480 V



# Options

---

## Hardware Options

### Maintenance Bypass Cabinets

MGE Galaxy 3500 Maintenance Bypass Cabinet 10-15 kVA 208 V Floormount

MGE Galaxy 3500 Maintenance Bypass Cabinet 20-30 kVA 208 V Floormount

MGE Galaxy 3500 Maintenance Bypass Cabinet 10-30 kVA 208 V Floormount with 42 Pos. Distribution Panel

MGE Galaxy 3500 Parallel Maintenance Bypass, up to 3 units 10-15 kVA 208 V Floormount

MGE Galaxy 3500 Parallel Maintenance Bypass, up to 3 units 20-30 kVA 208 V Floormount

APC Maintenance Bypass Panel 10-15k VA 208 V Wallmount

APC Maintenance Bypass Panel 20-30 kVA 208 V Wallmount

### MGE Galaxy 3500 Battery Enclosures

MGE Galaxy 3500 Extended Run Frame, with MCCB, with 2 Battery Modules Exp. to 6

MGE Galaxy 3500 Extended Run Enclosure, with MCCB, with 6 Battery Modules

MGE Galaxy 3500 Extended Run Frame with 2 Battery Modules Exp. to 6

MGE Galaxy 3500 Extended Run Enclosure with 6 Battery Modules

### Input Transformers

MGE Galaxy 3500 Input Transformer 480/208 V 10-30 kVA Floormount

MGE Galaxy 3500 Input Transformer 208/208 V 10-30 kVA Floormount

MGE Galaxy 3500 Input Transformer MCCB 480/208 V 10-30 kVA Floormount

MGE Galaxy 3500 Input Transformer MCCB 208/208 V 10-30 kVA Floormount

### Battery Modules

Battery Module for Symmetra PX, Smart-UPS VT or Galaxy 3500

### Baying Kits

MGE Galaxy 3500 Baying Kit, 14 inch/351 mm UPS Enclosure to XR

MGE Galaxy 3500 Baying Kit, 20 inch/523 mm UPS Enclosure to XR

MGE Galaxy 3500 Baying Kit, XR to XR

MGE Galaxy 3500 Parallel Operation Baying Kit

### Management Cards

SMARTSLOT EXPANSION CHASSIS

APC SmartSlot Triple Chassis Black

Modbus/Jbus Interface Card

## Filters

MGE Galaxy 3500 Air Filter Replacement Kit for 14 inch/351 mm Cabinet

MGE Galaxy 3500 Air Filter Replacement Kit for 20 inch/523 mm Cabinet

## Additional Options Compatible with MGE Galaxy 3500

APC Smart-UPS VT Conduit Box for 13.85 inch/352 mm UPS Enclosure

APC Smart-UPS VT Conduit Box for 20.59 inch/523 mm UPS Enclosure

APC Smart-UPS VT Battery Lock Kit for 1 Battery Module

APC Smart-UPS VT Battery Temperature Sensor for External Battery Cabinet

APC Smart-UPS VT Parallel Communications Kit

APC Smart-UPS VT Parallel Communications Kit, including Installation

APC Smart-UPS VT Parallel Maintenance Bypass Kit

APC Smart-UPS VT Subfeed Distribution 208 V, (5) L21-20 & (1) 50A HW output

APC Smart-UPS VT Subfeed Distribution 208 V, (5) L21-20 & (1) 63A HW output

APC Smart-UPS VT Input Breaker for 20 kVA/208 V UPS

APC Smart-UPS VT Input Breaker for 30 kVA/208 V UPS

APC Smart-UPS VT Input Breaker for 20 kVA 480/208 V UPS

APC Smart-UPS VT Input Breaker for 30 kVA 480/208 V UPS

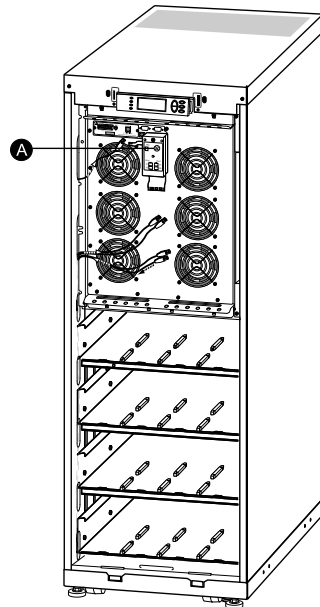
## Configuration Options

- Dual mains input
- Automatic internal bypass
- Hot-swappable batteries
- Modular power module
- Generator compatible
- Parallel up to 4 units for capacity and redundancy
- IP51 for industrial environments
- High Performance Battery module
- Up to 4 external runtime frames with batteries
- Parallel maintenance bypass panel – floor mount
- Single-unit maintenance bypass – wall mount and floor mount to single unit maintenance bypass
- Transformer Cabinets

# Parallel Capabilities

## Paralleling Capabilities

- Up to four UPS units paralleled for capacity
- Up to four UPS units paralleled for redundancy (n+1)
- Communication between parallel units via the Parallel Communication Box



A. Parallel  
Communication  
Box

# APC by Schneider Electric Limited Factory Warranty

---

## Three Phase Power Products or Cooling Solutions One-Year Factory Warranty

The limited warranty provided by APC by Schneider Electric (APC®) in this Statement of Limited Factory Warranty applies only to products you purchase for your commercial or industrial use in the ordinary course of your business.

### Terms of Warranty

American Power Conversion warrants that the product shall be free from defects in materials and workmanship for a period of one year from the date of product start-up when start-up is performed by APC authorized service personnel and occurs within six months of The APC shipment date. This warranty covers repairing or replacing any defective parts including on-site labor and travel. In the event that the product fails to meet the foregoing warranty criteria, the warranty covers repairing or replacing defective parts at the sole discretion of APC for a period of one year from the shipment date. For APC cooling solutions, this warranty does not cover circuit breaker resetting, loss of refrigerant, consumables, or preventive maintenance items. Repair or replacement of a defective product or part thereof does not extend the original warranty period. Any parts furnished under this warranty may be new or factory-remanufactured.

### Non-transferable Warranty

This warranty is extended to the first person, firm, association or corporation (herein referred to by “You” or “Your”) for whom the APC product specified herein has been purchased. This warranty is not transferable or assignable without the prior written permission of APC.

### Assignment of Warranties

APC will assign you any warranties which are made by manufacturers and suppliers of components of the APC product and which are assignable. Any such warranties are assigned “AS IS” and APC makes no representation as to the effectiveness or extent of such warranties, assumes no responsibility for any matters which may be warranted by such manufacturers or suppliers and extends no coverage under this Warranty to such components.

### Drawings, Descriptions

APC warrants for the warranty period and on the terms of the warranty set forth herein that the APC product will substantially conform to the descriptions contained in the APC Official Published Specifications or any of the drawings certified and agreed to by contract with APC if applicable thereto (“Specifications”). It is understood that the Specifications are not warranties of performance and not warranties of fitness for a particular purpose.

### Exclusions

APC shall not be liable under the warranty if its testing and examination disclose that the alleged defect in the product does not exist or was caused by end user or any third person misuse, negligence, improper

installation or testing. Further APC shall not be liable under the warranty for unauthorized attempts to repair or modify wrong or inadequate electrical voltage or connection, inappropriate on-site operation conditions, corrosive atmosphere, repair, installation, start-up by non-APC designated personnel, a change in location or operating use, exposure to the elements, Acts of God, fire, theft, or installation contrary to APC recommendations or specifications or in any event if the APC serial number has been altered, defaced, or removed, or any other cause beyond the range of the intended use.

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, BY OPERATION OF LAW OR OTHERWISE, OF PRODUCTS SOLD, SERVICED OR FURNISHED UNDER THIS AGREEMENT OR IN CONNECTION HERewith. APC DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY, SATISFACTION AND FITNESS FOR A PARTICULAR PURPOSE. APC EXPRESS WARRANTIES WILL NOT BE ENLARGED, DIMINISHED, OR AFFECTED BY AND NO OBLIGATION OR LIABILITY WILL ARISE OUT OF, APC RENDERING OF TECHNICAL OR OTHER ADVICE OR SERVICE IN CONNECTION WITH THE PRODUCTS. THE FOREGOING WARRANTIES AND REMEDIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES AND REMEDIES. THE WARRANTIES SET FORTH ABOVE CONSTITUTE APC SOLE LIABILITY AND PURCHASER'S EXCLUSIVE REMEDY FOR ANY BREACH OF SUCH WARRANTIES. APC WARRANTIES RUN ONLY TO PURCHASER AND ARE NOT EXTENDED TO ANY THIRD PARTIES.

IN NO EVENT SHALL APC, ITS OFFICERS, DIRECTORS, AFFILIATES OR EMPLOYEES BE LIABLE FOR ANY FORM OF INDIRECT, SPECIAL, CONSEQUENTIAL OR PUNITIVE DAMAGES, ARISING OUT OF THE USE, SERVICE OR INSTALLATION, OF THE PRODUCTS, WHETHER SUCH DAMAGES ARISE IN CONTRACT OR TORT, IRRESPECTIVE OF FAULT, NEGLIGENCE OR STRICT LIABILITY OR WHETHER APC HAS BEEN ADVISED IN ADVANCE OF THE POSSIBILITY OF SUCH DAMAGES, SPECIFICALLY, APC IS NOT LIABLE FOR ANY COSTS, SUCH AS LOST PROFITS OR REVENUE, LOSS OF EQUIPMENT, LOSS OF USE OF EQUIPMENT, LOSS OF SOFTWARE, LOSS OF DATA, COSTS OF SUBSTITUANTS, CLAIMS BY THIRD PARTIES, OR OTHERWISE.

NO SALESMAN, EMPLOYEE OR AGENT OF APC IS AUTHORIZED TO ADD TO OR VARY THE TERMS OF THIS WARRANTY. WARRANTY TERMS MAY BE MODIFIED, IF AT ALL, ONLY IN WRITING SIGNED BY AN APC OFFICER AND LEGAL DEPARTMENT.

## Warranty Claims

Customers with warranty claims issues may access the APC worldwide customer support network through the APC web site: "<http://www.apc.com/support/contact/>". Select your country from the country selection pull-down menu. Open the Support tab at the top of the web page to obtain contact information for customer support in your region.





## **Worldwide Customer Support**

Customer support is available at no charge via e-mail or telephone. Contact information is available at [www.apc.com/support/contact](http://www.apc.com/support/contact)

© APC by Schneider Electric. APC and the APC logo are owned by Schneider Electric Industries S.A.S., American Power Conversion Corporation, or their affiliated companies. All other trademarks are property of their respective owners.